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EXAMINER

LE, MIRANDA

ART UNIT

PAPER NUMBER

2167

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/11/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary

Application No.

10/737,109

Applicant(s)

WANG, JIANXIN

Examiner

Miranda Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment, filed 10/16/2006.

Claims 1-34 are pending in this application. Claims 1, 13, 25, 34 are independent claims.

In the Amendment, claim 1 has been amended. This action is made Final.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/19/06 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 13-16, 25, 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsuchiya et al. (US Patent No. 7,051,173).

Tsuchiya anticipated independent claims 1, 13, 25, 34 by the following:

As per claim 1, Tsuchiya teaches a serverless backup system for backing up information on a network including one or more servers (*Fig. 41*), comprising:

a backup storage system for backing up information (*i.e. cluster system in Fig. 2, col. 7, lines 51-63*);

a storage system (*i.e. backup medium 15, and the tape 16, col. 7, lines 51-63*) for storing information to be backed up and restored (*i.e. restoring process, col. 16, line 41 to col. 17, line 2*), wherein information being backed up is transferred directly from the storage system to the backup storage system without going through a server and information being restored is transferred directly from the backup storage system to the storage system without going through the server (*Figs. 2, 41, col. 7, line 51 to col. 8, line 19; col. 19, lines 25-34*).

As per claim 13, Tsuchiya teaches a serverless backup method for backing up information on a network including one or more servers, comprising:

providing a backup storage system for backing up information (*i.e. cluster system in Fig. 2, col. 7, lines 51-63*);

providing a storage system for storing information to be backed up and restored (*i.e. backup medium 15, and the tape 16, col. 7, lines 51-63*) (*Figs. 2, 41, col. 7, line 51 to col. 8, line 19; col. 19, lines 25-34*);

backing up information by transferring information (*i.e. a copy process, col. 15, lines 25-35*) directly from the storage system to the backup storage system without going through a server (*col. 8, lines 20-62*); and

restoring information by transferring information directly from the backup storage system to the storage system without going through the server (*i.e. restoring process, col. 16, line 41 to col. 17, line 2; col. 18, lines 11-27*).

As per claim 25, Tsuchiya teaches a computer readable medium including code for performing a serverless backup method for backing up information on a network including one or more servers, comprising:

code for backing up information by transferring information directly from a storage system to a backup storage system without going through a server (*i.e. a copy process, col. 15, lines 25-35*); and

code for restoring information by transferring information directly from the backup storage system to the storage system without going through the server (*i.e. restoring process, col. 16, line 41 to col. 17, line 2; col. 18, lines 11-27*).

As per claim 34, Tsuchiya teaches a serverless backup method comprising:

opening a file system root directory (*Figs. 21, 22, 23; col. 8, lines 45-62*);

parsing the file system root directory for allocation tables of each file and finding attributes of each file (*col. 8, lines 45-62; col. 13, line 13-61*);

examining the attributes of each file and determining whether a file is resident or non resident (*col. 8, line 63 to col. 9, line 11*);

backing up entire attributes of a file if it is determined that the file is resident (*col. 11, line 58 to col. 12, line 46*); and

backing up attributes and data blocks belonging to the file if it is determined that the file is non resident (*col. 11, line 58 to col. 12, line 46*).

As to claims 2, 14, Tsuchiya teaches the backup storage system comprises a tape storage system (*col. 7, lines 51-63*).

As to claims 3, 15, Tsuchiya teaches the storage system comprises a disk storage system (*col. 7, lines 51-63*).

As to claims 4, 16, Tsuchiya teaches the network comprises a storage area network (Fig. 41).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5, 17, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US Patent No 7,051,173), in view of Tamura et al. (US Patent No. 6,728,848).

As to claims 5, 17, 26, Tsuchiya does not expressly teach the information is transferred between the backup storage system and the storage system using an Extended Copy command.

However, Tamura teaches an Extended Copy command (*i.e. E-copy command, col. 2, lines 13-24*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya and Tamura at the time the invention was made to modify the system of Tsuchiya to include the information is transferred between the backup storage system and the storage system using an Extended Copy command as taught by Tamura. One of ordinary skill in the art would be motivated to make this combination in order to find an available back-device and the information indicated in the E-copy command to the back-up device (*col. 2, lines 13-24*), as doing so would give the added benefit of improving backup techniques which further decentralize the backup of a storage system on a storage area network.

7. Claims 6, 7, 18, 19, 27, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US Patent No 7,051,173), in view of Clifton et al. (US Patent No. 6,081,875).

As to claims 6, 18, 27, Tsuchiya does not expressly teach the system as recited in claim 1, wherein prior to transferring information directly from the storage system to the backup storage system, a snapshot of the storage system is taken.

However, Clifton teaches prior to transferring information directly from the storage system to the backup storage system, a snapshot of the storage system is taken (*i.e. such time as*

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they are needed to construct the snapshot database image to be stored to BSU 150, col. 3, line 61 to col. 4, line 13).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya and Clifton at the time the invention was made to modify the system of Tsuchiya to include prior to transferring information directly from the storage system to the backup storage system, a snapshot of the storage system is taken as taught by Clifton. One of ordinary skill in the art would be motivated to make this combination in order to construct the snapshot database image in view of Clifton (*col. 3, line 61 to col. 4, line 13*), as doing so would give the added benefit of allowing users unrestricted access to the system during backup process while creating a snapshot backup image on tape that does not require reconstruction.

As to claims 7, 19, 28, Clifton teaches a period of write inactivity to the storage system is waited for prior to taking the snapshot (*col. 3, line 61 to col. 4, line 13*).

8. Claims 8, 9, 20, 21, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US Patent No 7,051,173), in view of Clifton et al. (US Patent No. 6,081,875), and further in view of Gold et al. (US Patent No. 6,785,786).

As to claims 8, 20, 29, Tsuchiya and Clifton do not expressly teach the period of write inactivity is a predefined period of time.

However, Gold teaches the period of write inactivity is a predefined period of time (*i.e. if the time is set to 5 seconds, col. 5, lines 55-67*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya, Clifton and Gold at the time the invention was made to modify the system of Tsuchiya and Clifton to include the period of write inactivity is a predefined period of time as taught by Gold. One of ordinary skill in the art would be motivated to make this combination in order to determine when a file is safe to backup as taught by Gold (*col. 5, lines 55-67*), as doing so would give the added benefit of storing in primary data storage a most recent version of all data received from the clients and, from time to time, in accordance with pre-determined criteria, storing in secondary data storage at least some of the data stored in the primary data storage.

As to claims 9, 21, 30, Gold does not specifically teach the predefined period of time is three seconds.

However, Gold teaches "the time is set to 5 seconds" (*col. 5, lines 55-67*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya, Clifton and Gold at the time the invention was made to modify the system of Tsuchiya and Clifton to include the predefined period of time to 5 seconds as taught by Clifton instead of 3 seconds to satisfy the implementation preferences. One of ordinary skill in the art would be motivated to make this combination in order to determine when a file is safe to backup as taught by Gold (*col. 5, lines 55-67*), as doing so would give the added benefit of storing in primary data storage a most recent version of all data received from the clients and, from time to time, in accordance with pre-determined criteria, storing in secondary data storage at least some of the data stored in the primary data storage. It would have been obvious to one ordinary skill of the art having the teaching of Gold at the time the invention was made to set the predefined period of

time is three seconds in order to determine when a file is safe to backup as taught by Gold (*col. 5, lines 55-67*), as doing so would give the added benefit of storing in primary data storage a most recent version of all data received from the clients and, from time to time, in accordance with pre-determined criteria, storing in secondary data storage at least some of the data stored in the primary data storage.

9. Claims 10-12, 22-24, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchiya et al. (US Patent No 7,051,173), in view of Clifton et al. (US Patent No. 6,081,875), and further in view of Blam et al. (US Patent No. 6,738,923).

As to claims 10, 22, 31, Tsuchiya and Clifton do not expressly teach the system as recited in claim 7, wherein if the period of write inactivity does not occur by time a timeout period has expired, the transfer fails.

However, Blam teaches a timeout period (*col. 4, line 65 to col. 5, line 27*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya, Clifton at the time the invention was made to modify the system of Tsuchiya and Clifton to include the period of write inactivity does not occur by time a timeout period has expired, the transfer fails as taught by Blam. One of ordinary skill in the art would be motivated to make this combination in order to access and boot from the next backup server in the network as taught by Blam (*col. 5, lines 15-27*), as doing so would give the added benefit of adjusting failover intervals for booting to backup servers when transport service is not available.

As to claims 11, 23, 32, Blam teaches the timeout period is a predefined period of time (*col. 4, line 65 to col. 5, line 27*).

As to claims 12, 24, 33, Blam does not specifically teach the predefined period of time is 80 seconds. However, Blam teaches a method of adjusting failover intervals (*col. 5, lines 59-67*).

It would have been obvious to one of ordinary skill of the art having the teaching of Tsuchiya, Clifton at the time the invention was made to modify the system of Tsuchiya and Clifton, Blam to implement a method of adjusting failover intervals, as disclosed by Blam to adjust the predefined period of time is 80 seconds to satisfy the implementation preferences. One of ordinary skill in the art would be motivated to make this combination in order to access and boot from the next backup server in the network (*col. 5, lines 15-27*), as doing so would give the added benefit of adjusting failover intervals for booting to backup servers when transport service is not available.

Response to Arguments

10. Applicant's arguments filed 10/16/2006 have been fully considered but they are not persuasive.

Applicant argues that:

(a) Tsuchiya does not appear to disclose, teach, or suggest “*a storage system for storing information to be backed up and restored, wherein information being backed up is transferred directly form the storage system to the backup storage system without going through a server and information being restored is transferred directly from the backup storage system to the storage system without going through the server*”. (Claim 1)

(b) Tsuchiya does not appear to disclose, teach, or suggest “backing up entire attributes of a file if it is determined that the file is non resident”, and “backing up attributes and data blocks belonging to the file if it is determined that the file is non resident”. (Claim 34)

The Examiner respectfully disagrees for the following reasons:

Per (a), firstly, pursuant to the instant specification, it would be beneficial if the backup operations could be performed without requiring heavy utilization of the server system, thereby freeing up the server even during information backup ([0012]). Similarly, Tsuchiya teaches “*a storage system for storing information to be backed up and restored, wherein information being backed up is transferred directly from the storage system to the backup storage system without going through a server and information being restored is transferred directly from the backup storage system to the storage system without going through the server*” as the backup system includes: computers 11, backup medium 15, and tape 16, tape control unit 27, *shown* in Fig. 32; hence information being backed up is transferred directly from the storage system to the backup storage system without going through a server in this system.

Also, the data is read/written between the *backup medium 15 and tape 16* is transferred directly without going through any device or system as seen in Fig. 32. It should be noted that *the backup medium 15* equates to the backup storage system of claim 1, *tape 16* equates to the storage system as recited in claim 1.

Secondly, according to the instant Specification, “The backup applications read the data from the primary storage device to the server memory”, [0012]. Generally, one skilled in the art would understand that the “the system backing up information on the network using the server includes the server memory, wherein the backup applications *read/write* the data from a primary

storage, or a backup storage, from or to the *server memory* before transferring the data to a computer”. Analogously, Tsuchiya teaches the step of read/write data directly without going through the server in col. 2, lines 6-14 as *“The control device controls the write data that each computer writes in the sharing medium”*. (This should be understood there is no step of read/write data from/to server memory).

Thirdly, *Fig. 36* of Tsuchiya shown a local computer including tape control unit 27, and log management unit 26, therefore, the local computer could operate independently for read/write data in the backup system without the server operations.

Per (b), Tsuchiya does suggest *“backing up entire attributes of a file if it is determined that the file is non resident”*, and *“backing up attributes and data blocks belonging to the file if it is determined that the file is non resident ”* as *“if a log with the same area is not stored, the received log is recorded in the log medium”*, col. 8, line 9 to col. 10, line 5.

It is suggested that the limitation “a file is resident or non resident” should be further clarified as it is too broad to read on a log file of Tsuchiya, and a log file of Tsuchiya *is not stored* could be equivalent with *“non resident”* of claim 34.

Accordingly, the claimed invention as represented in the claims does not represent a patentable over the art of record.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le
December 27, 2006



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